

What is ECCSEL?

European Carbon Dioxide Capture and Storage Laboratory Infrastructure

- ECCSEL is the European Research Infrastructure for CO₂ Capture, Utilisation, Transport and Storage (CCUS)
- ECCSEL is a distributed, integrated research infrastructure encompassing interlinked national nodes and facilities
- The ECCSEL infrastructure consists of over 80 research facilities
- ECCSEL covers research infrastructure across the CCUS value chain, such as:
 - Capture: membranes, solvents, sorbents, combustion, cryogenic, integrated CCUS system
 - Storage: pressure/injection, migration, caprock/well integrity, leakage, mitigation/remediation, microseismicity, reactivity/mineralisation, leakage, monitoring, static modelling, dynamic modelling
 - Transport Storage: Security/troubleshooting, fluid characterisation, flow characterisation, material testing, CO₂ pipeline transport and integrity, shipping of CO₂
 - Utilisation: Thermochemical conversion and hydrogenation of CO₂, electrochemical and photochemical conversion of CO₂, CO₂ conversion to solid carbonates, smart integrations with carbon capture and re-use into valuable products

Who are ECCSEL?

- ECCSEL's National Nodes are Norway, the Netherlands, Italy, France, and the UK
- ECCSEL is a legal entity, with ERIC statutes (European Research Infrastructure Consortium) with its headquarters (Operations Centre) in Norway
- Each Member country is represented by a National Node
- ECCSEL is made up of leading CCUS facilities provided by over 20 European institutions



What does ECCSEL do?

ECCSEL Integrates, Updates and Constructs

- Facilitates and coordinates requests for access to facilities within the ECCSEL Research Infrastructure
- Reaches out to relevant industry and research communities to determine their research infrastructure needs to enable full-scale deployment of CCUS in Europe
- Coordinates European development of facilities and their services to meet identified needs
- Represents European Research Infrastructure for CCUS in relevant fora

How does ECCSEL fit with...?

- **European Energy Research Alliance – EERA**
Closely linked. EERA CCS Joint Programme provides European strategic research direction, ECCSEL ensures infrastructure/facilities are available
- **SET-Plan**
Development of CO₂ storage technologies to 2030 and beyond will require availability of world class R&D infrastructure. ECCSEL plays a key role in this pathway as specified in the SET-Plan WG9 on CCS and CCU Implementation Plan: '(ECCSEL is) a world-class research infrastructure facilitating ambitious R&D activities, European industrial initiatives, and education of specialists for the new CCUS industry'
- **Mission Innovation**
ECCSEL is aligned with the implementation of the Innovation Challenge IC3 (Carbon Capture) to enable the development and testing of new and novel technologies.




What does ECCSEL offer?

- Access to leading research facilities for users worldwide
- Single contact point for the facilities included in the ECCSEL Research Infrastructure
- Facilitation of fundamental and applied research leading to commercial applications that help advance CCUS deployment in Europe and worldwide
- Coordination of CCUS Research Infrastructure in Europe, creating synergies and opportunities to increased efficiency in research investments
- Increased researcher mobility
- Improvement of the competitiveness of the European industry and SMEs by raising their CCUS TRLs

Who pays for ECCSEL?

- Preparation, implementation and development of ECCSEL has been supported through the European Union FP7 and HORIZON 2020 research and innovation programmes
- The operation of the ECCSEL Research Infrastructure is financed by its Member countries through a yearly fee
- Operation of ECCSEL facilities is financed by the facility owners and relevant projects
- Access is financed by the users or by linked projects
- ECCSEL is closely aligned with European and national CCUS implementation and research funding programmes, e.g., H2020 & Horizon Europe, ERA-NET ACT, CLIMIT...

What is the future of ECCSEL?

- ECCSEL is not a traditional project with a finite lifetime. As an [ESFRI](#) landmark, ECCSEL ERIC is a legal entity with an indefinite lifespan
- ECCSEL will address infrastructure needs identified in its Research Priorities through its Infrastructure Development Plan
- [ECCSEL ERIC Roadmap](#) leads the way to CCUS technologies advancement for enabling low to zero CO₂ emissions from industry and power generation to combat global climate change, as well as CO₂ reduction in the atmosphere
- Find out more about facilities and how to access them: www.eccsel.org/news   

“ My experience with ECCSEL widened my horizons both scientifically and personally. The program granted me the opportunity to collaborate in a multicultural environment with experts in CCUS and access state-of-the-art methods and equipment.

Eirini, Transnational Access Facility User, National Technical University of Athens

See also

